



National Transportation Safety Board Aviation Accident Final Report

Location:	Sitka, AK	Accident Number:	ANC04FAMS2
Date & Time:	09/20/2004, 1115 AKD	Registration:	N712TS
Aircraft:	de Havilland DHC-2	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	5 Fatal
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The commercial certificated pilot, with four passengers, departed for a remote lodge on an on-demand air taxi flight in an amphibious float-equipped airplane. The airplane was the second of two company airplanes to depart for the lodge. The route of flight would have transited around the north end, from the west side to the east side of a large island. The first company airplane completed the flight, but the accident airplane did not arrive at the lodge, and was reported overdue. Throughout the morning, before the accident flight, the pilot received two telephonic weather briefings from the local FAA flight service station, which included an AIRMET for mountain obscuration, and two pilot reports from the first pilot. In addition, the pilot visited the FSS for another weather briefing. The weather conditions along the route of flight had reported visibilities as low as 2 miles, and ceilings as low as 200 feet due to rain and mist, and wind of 35 to 40 knots. The area of the accident flight is characterized by steep mountainous island terrain, numerous ocean channels, and an extensive shoreline, containing small coves and bays. The area frequently has low ceilings and reduced visibility due to rain, fog, and mist. The island is one of several barrier islands between the north Pacific Ocean and mainland Alaska. The western coastal portion of the island is exposed to open ocean. The eastern coastal portion of the island is adjacent to a wide strait, which separates the island from several inner islands. The area of operations for the accident airplane has no low-level radar coverage, intermittent radio communications, and limited weather reporting capability. The company's operations manual states that aircraft may not be released for a flight at any location unless there is agreement about the parameters of the flight with the pilot-in-command, and any of the following: Director of operations; chief pilot; or trained individuals granted the authority by the director of operations. The airplane has been declared missing, and is presumed to have crashed; the occupants are presumed to have received fatal injuries.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Reason for occurrence is undetermined. The airplane is missing.

Findings

Occurrence #1: MISSING AIRCRAFT
Phase of Operation: UNKNOWN

Findings

1. (C) REASON FOR OCCURRENCE UNDETERMINED

Factual Information

HISTORY OF FLIGHT

On September 20, 2004, at 1035 Alaska daylight time, an amphibious float-equipped de Havilland DHC-2 airplane, N712TS, departed the Sitka Rocky Gutierrez Airport, Sitka, Alaska, for a remote lodge located near the Warm Springs Bay Seaplane Base, Baranof, Alaska. The airplane did not arrive at the lodge, and was reported overdue at 1335. The airplane is missing and is presumed to have crashed about 1115 Alaska daylight time. The airplane was being operated as a visual flight rules (VFR) on-demand passenger flight under Title 14, CFR Part 135, when the accident occurred. The airplane was operated by Harris Aircraft Services, Inc., Sitka. The commercial certificated pilot and the 4 passengers are presumed to have received fatal injuries. Visual meteorological conditions prevailed, and a VFR flight plan was filed.

The chief pilot for the operator reported that the accident flight was the second of two company airplanes that were transporting passengers to and from the Warm Springs Lodge, located on the east side of Baranof Island. The chief pilot indicated that when flights cannot fly directly from east to west, over the center of the island to Baranof, they typically follow one of two routes around the north end of the island. One route follows the shoreline via Salisbury Sound, Peril Strait, Rose Channel, Deadman Reach, Rodman Bay, Hanus Bay, Portage Arm along Chatham Strait, and Waterfall Cove to Warm Springs Bay. The second route cuts overland from Rose Channel, through a low pass along Adams Creek, to Rodman Bay. The second route cuts off the shoreline around the Duffield Peninsula, located at the north end of Baranof Island.

The accident airplane pilot telephoned the Federal Aviation Administration (FAA) Sitka Flight Service Station (FSS) at 0618, and inquired about the weather conditions for the day by stating, in part: "Could I just know what the weather is doing outside, and the terminal [forecast] for the day, and maybe the coastal and inside waters." The flight service station specialist replied, "Right now, it's still too dark to look out the window, but the ASOS is reporting wind out of the east at 16 [knots], gusts to 23 [knots]; visibility 3 [statute miles]; few clouds at 3,000, ceiling 3,600 overcast in rain and mist; temperature 11 [degrees C], dew point 9 [degrees C]; altimeter 29.75, and we have a pretty good storm blowing outside, and basically we got a low pressure system that's moving onshore throughout the day with conditions deteriorating as the day goes on. You know on the inside, and it's already started here, so far nobody's IFR, it's just rain and wind and turbulence."

The pilot stated, "Oh just (unintelligible), is it gonna be worse on the inside? I'm heading over to Warm Springs this morning." The FSS specialist replied, "I don't have any observations over there, but it sounds like it's still Okay on the inside. I'm looking at Kake (Alaska) and they've got visibility ten [miles] and it's not raining there yet. They are reporting 100 [feet] scattered and they do have wind already; wind out of the southeast at 12 [knots] gusting to 19 [knots], and that usually, Kake doesn't report a whole lot of wind." The specialist continued by stating, "But like I said, no (unintelligible) conditions you know. Visibility, at least on the inside so far has been Okay, and the clouds have been Okay, it's just the rain and the wind. It's already picked up on the inside, and it's just forecast to get worse throughout the day."

The pilot commented, "Yeah, I knew it was, I just was trying to make sure the forecast hadn't changed. Actually, last night when I called, the forecast was actually for it to, the visibility, to pick up and the rain to die down late morning. Is that still the case, or is it gonna get worse?" The specialist replied, "For the Sitka terminal forecast, they have visibility dropping down to 4

[miles] at 0600 and then picking back up to better than 6 [miles] at 1100, and then it's dropping back down to 3 [miles] after 1600, but the wind and the rain are supposed to stick around all day."

The pilot said, "Okay, are they gonna increase?" The specialist replied, "Yes, by 1600 they have wind out of the south at 25 [knots], gusting to 40 [knots], with wind shear at 2,000 [feet]." The pilot inquired, "What do they report for after 1100?" The reply was, "Wind. After 1100 at Sitka, wind 110 [degrees] at 15 [knots]. Visibility greater than 6 [miles] in rain; 1,000 [feet] scattered, ceiling 2,500 broken, 3,500 overcast." The briefing was concluded at 0621.

About 0745, Sitka FSS personnel reported that the pilot received an over-the-counter abbreviated weather briefing at the flight service station. In a written statement, the FSS specialist reported that he provided the accident airplane pilot with radar and satellite image loops, the forecast for coastal and inside waters, the Aviation Routine Weather Reports (METAR) for Kake, and a pilot report for the Kake area, received at the FSS at 0802. The FSS specialist also reported that during the pilot's visit, the operator called the pilot on his cell phone, and the pilot commented over the phone, "Conditions are getting worse on the inside, around Kake." The briefing was concluded about 0815.

The chief pilot reported that the first company airplane, N60TF, departed Sitka, located on the west side of Baranof Island, at 0930 and followed the shoreline to Rose Channel, overland via Adams Creek to Rodman Bay, and then along the shoreline via Portage Arm and the Chatham Strait to Baranof, located on the east side of the island. The chief pilot said that the first airplane transited Adams Creek about 1,200 to 1,500 feet msl. The summit of the pass is about 500 feet msl. After the first airplane arrived at the Warm Springs Lodge, the pilot asked the lodge owner to telephone Harris Aircraft Services and provide a weather report of the conditions along the route. The weather report to the operator included comments of low ceilings near Salisbury Sound, and from Hidden Falls to Warm Springs, and fog along the shoreline near Deadman Reach, which is located at the north end of the island. After loading passengers at the lodge, N60TF departed for a return flight to Sitka via Adams Creek.

At 0949, the accident airplane pilot again telephoned the Sitka FSS. He asked the FSS specialist to notify him if the first company airplane (N60TF) called with a pilot report. The FSS specialist agreed to call, and he provided the pilot with additional weather data by stating, "I got an updated terminal forecast if you want me to read it to you now." The pilot agreed, and the specialist stated, in part: "Yeah, they changed their mind about that whole 1100 thing...What I've got is wind, 120 [degrees] at 16 [knots], gusts 24 [knots]; visibility, 3 [miles] in rain and mist; 2,500 scattered, ceiling 3,500 overcast; and between now and 1200, occasional visibility greater than 6 [miles] in light rain; ceiling 2,500 broken; and then after 1500, wind picking up again to 160 [degrees] at 25 [knots], gusts 40 [knots]; visibility, 3 [miles] in rain and mist; ceiling, 1,200 broken, 2,500 overcast, with the wind shear at 2,000 [feet], wind 170 [degrees] at 50 [knots]."

At 1010, Sitka FSS personnel telephoned the operator and relayed a pilot report to the accident pilot from N60TF by stating, "Just got a call from Ron (the pilot of N60TF); could barely hear him; I'm not sure, I think he's on the edge of my range there. He said Peril Strait, ceilings 1,000 [feet]; visibility, 8 [miles]; wind, 140 [degrees] at 40 [knots], gusts higher; and Salisbury Sound, flight visibility got down to 2 [miles]...It looks like conditions have improved since then, but it looks like they're going back down soon...Conditions change pretty, pretty rapidly, going up and down." The accident pilot confirmed with the specialist that N60TF was still on his way

to Warm Springs Lodge, and confirmed the pilot report of the visibility of 2 miles at Salisbury Sound.

At 1024, the accident airplane pilot telephoned the Sitka FSS at the specialist's request, and was provided with another pilot report from N60TF, in which the FSS specialist stated, "Yeah, Ron just called me from Chatham Strait; he said ceilings down to 500 to 200 [feet]; visibility, 2 [miles] and still wind out of the southeast at 35 to 40 [knots]." The accident pilot asked, "But he's still going (unintelligible)? He didn't say if he was coming back or not?" The specialist replied, "I don't know it's...no, he didn't say if he was coming back or not...I can barely hear him and he can barely hear me...so it's kinda, I just grab things as I go."

At 1034, the accident airplane pilot radioed the Sitka FSS, reporting that he was taxiing for departure. He was provided with a local airport advisory which included the reported winds as 15 knots, gusts to 22 knots. He filed a VFR flight plan from Sitka to Warm Springs to Sitka, which included 2 hours en route, with 2 hours and 45 minutes of fuel. The pilot then departed at 1035. It is unknown if the pilot followed the first airplane's route by transiting overland via Adams Creek, or if the pilot followed the shoreline around the north end of the island via Deadman Reach. The operator reported that the normal flight time from Sitka to Baranof is about 50 minutes.

At 1212, the operator telephoned the Sitka FSS to inquire if the accident airplane had been heard from, to which the reply was "negative." The operator inquired about the accident airplane's estimated time of arrival (ETA), and was told 1235. At 1236, the operator called the Sitka FSS and extended the accident airplane's flight plan by one hour.

When N60TF returned to Sitka, the pilot was notified that the accident airplane had not arrived at Baranof. The first airplane's pilot loaded additional passengers and departed for Warm Springs Lodge, again transiting the north end of Baranof Island via Adams Creek. He unloaded and loaded additional passengers, and returned to Sitka via the shoreline along Deadman Reach. No sign of the missing airplane was observed,

The terrain around the Sitka area is characterized by steep mountainous island terrain, numerous ocean channels, and an extensive shoreline, containing small coves and bays. The area frequently has low ceilings and reduced visibility due to rain, fog, and mist. Baranof Island is one of several barrier islands between the north Pacific Ocean and mainland Alaska. The western coastal portion of Baranof Island is exposed to open ocean. The eastern coastal portion of the island is adjacent to the Chatham Strait, which separates the island from several inner islands. The area of operations for the accident airplane has no low-level radar coverage, intermittent radio communications, and limited weather reporting capability.

Kake, Alaska, is located 31 nautical miles east of Baranof, across the Chatham Strait and Frederick Sound, on the west coast of Kupreanof Island.

PERSONNEL INFORMATION

Pilot Information

The pilot held a commercial pilot certificate with airplane single-engine land, single-engine sea, multiengine land, and instrument airplane ratings. The most recent second-class medical certificate was issued to the pilot on September 2, 2003, and contained no limitations.

According to the operator, the pilot was hired in January, 2004, having flown in the Ketchikan, Alaska, area, during the previous summer. The operator reported that the pilot's total

aeronautical experience consisted of about 2,878 hours, of which, about 500 hours were accrued in the accident airplane make and model. In the preceding 90 and 30 days prior to the accident, the operator reported that the pilot accrued 280 and 100 hours respectively.

The pilot was provided with training on the use of the airplane's Capstone avionics equipment by the operator. The operator was provided with an avionics training device by Capstone program personnel.

Company Information

According to the company's Operations Manual, under Operational Control, the manual states that aircraft may not be released for a flight at any location unless there is agreement about the parameters of the flight with the pilot-in-command, and any of the following: Director of operations; chief pilot; or trained individuals granted the authority by the director of operations. Under Revenue Flights - Remote Locations, the company manual states that operational control is delegated to the pilot-in-command under the authority of the director of operations.

AIRCRAFT INFORMATION

The operator reported that the airplane had accumulated a total time in service of 16,155 hours. The most recent 100 hour inspection was completed on September 1, 2004, 20 hours before the accident.

The accident airplane was equipped with avionics hardware provided by the FAA's Capstone Phase II program. This equipment included an electronic primary flight display, and an electronic multifunction display. The airplane did not have a universal access transceiver (UAT), which would have provided position reporting data via an automatic dependant surveillance broadcast (ADS-B) signal. The airplane still retained pitot/static instruments, including airspeed indicators, altimeter, and attitude indicator.

Terrain and moving map information, coupled to the airplane's GPS position data, is one of several visual display options on the multifunction display that is available to the pilot. Wind vector and velocity information can be displayed on the multifunction display. The airplane's position can be displayed in relation to its location over the terrain, and may include bearing and distance information to selected points. The terrain display has color shading depicting areas of terrain that are black (2,000 feet below the aircraft), green (between 2,000 and 700 feet below the aircraft), yellow (between 700 and 300 feet below the aircraft), and red (at or within 300 feet of the aircraft). The Capstone equipment incorporates an integrated auditory system that provides visual and auditory warnings, cautions, and advisories to the pilot. The Capstone equipment has a terrain awareness and warning system (TAWS) that provides warnings and alerts to the pilot about hazardous terrain.

METEOROLOGICAL INFORMATION

An area forecast, issued on September 20, 2004, at 0545, and valid until 2400, included a synopsis, which stated, in part: A 990 millibar low over the Kennedy Entrance to Cook Inlet, will move northeast to the eastern interior of Alaska by the end of the reporting period. An associated occluded front approaching the southwest central gulf coast, will move northeast to the Alaska/Canada border from Yakutat, Alaska, south, by the end of the reporting period. AIRMET Sierra, for IFR conditions and mountain obscuration, is valid until 1200. Mountains occasionally obscured in clouds, and in precipitation. No change.

The forecast for central southeast Alaska, valid until 1800, stated, in part: AIRMET for mountain obscuration. Mountains occasionally obscured in clouds, and in precipitation. No change. Clouds and weather, 2,500 feet scattered, 4,000 feet broken, 9,000 feet overcast, increasing layers to 25,000 feet. Occasionally, 2,500 feet broken to overcast, increasing layers to 25,000 feet; visibility, 5 statute miles in light rain. Outlook, valid from 1800 to 1200 on September 21, marginal VFR conditions with ceilings due to rain. Turbulence, none significant. Icing and freezing level, AIRMET for icing. Occasional moderate rime icing from 5,000 to 12,000 feet. Freezing level, 5,000 feet, no change.

The closest official weather observation station is Sitka, Alaska. A terminal forecast for Sitka, issued at 0951, and valid from 1000 on September 20 until 1000 on September 21, was reporting, in part: Wind, 110 degrees (true) at 15 knots, gusts to 25 knots, visibility, 1 statute mile in rain and mist; clouds and sky condition, 2,500 feet overcast. Temporary conditions from 1000 to 1400, visibility 4 statute miles in light rain; 2,500 feet overcast, 3,500 broken. From 1400, wind 160 degrees (true) at 25 knots, gusts to 40 knots; visibility, 3 statute miles in rain and mist; 1,200 feet broken, 2,500 feet overcast; low level wind shear from 020 degrees to 170 degrees at 50 knots. From 2200, wind 200 degrees (true) at 15 knots, gusts to 25 knots; visibility 1 statute mile in rain and mist; 1,500 feet broken. From 0100 on September 21, wind 210 degrees (true) at 17 knots; visibility 4 statute miles in light rain showers; 1,500 feet broken, 4,000 feet overcast.

At 0925 when the first company airplane, N60TF, departed Sitka, a special weather observation was reporting, in part: Wind, 100 degrees (true) at 19 knots, gusts to 24 knots; visibility, 1 1/2 statute miles in light rain and mist; clouds and sky condition, 2,900 feet overcast; temperature 54 degrees F, dew point, 50 degrees F; altimeter, 29.69 in Hg; remarks, peak wind 110 degrees at 26 knots. At 0933, a special weather observation was reporting, in part, an increase in the visibility to 3 statute miles in light rain and mist.

At 0953, a METAR at Sitka was reporting, in part: Wind, 110 degrees (true) at 16 knots, gusts to 23 knots; visibility, 3 statute miles in rain and mist; clouds and sky condition, 2,700 feet overcast; temperature, 54 degrees F; dew point, 52 degrees F; altimeter, 29.69 inHg.

At 1035, when the accident airplane departed Sitka, the airport advisory provided by the Sitka FSS included: "Wind, 090 degrees at 15 knots, gusts to 22 knots, favoring runway 11."

At 1053, after the accident airplane departed Sitka, a METAR was reporting in part: Wind, 110 degrees (true) at 14 knots, gusts to 20 knots; visibility, 3 statute miles in light rain and mist; clouds and sky condition, 2,300 feet overcast; temperature, 55 degrees F; dew point, 52 degrees F; altimeter, 29.68 inHg.

At 1036, an automated weather observation for Kake was reporting, in part: Wind, 130 degrees (true) at 13 knots, gusts to 18 knots; visibility, 5 statute miles; clouds and sky condition, 1,800 feet overcast; temperature, 46 degrees F; dew point, 43 degrees F; altimeter, 29.83 inHg.

At 1053, an automated weather observation for Kake was reporting, in part: Wind, 130 degrees (true) at 12 knots, gusts to 19 knots; visibility, 5 statute miles; clouds and sky condition, 1,800 feet overcast; temperature, 48 degrees F; dew point, 45 degrees F; altimeter, 29.82 inHg.

At 0802, a pilot report from a Hughes 500 helicopter, about 10 miles south of Kake, was reporting winds, 045 degrees at 20 knots, gusts to 30 knots; visibility, 5 statute miles in rain and fog; ceiling, 1,200 feet msl; remarks, between Petersburg, Alaska, and Hamilton Bay, Alaska, isolated fog.

COMMUNICATIONS

Review of the air to ground radio communications transcripts maintained by the FAA at the Sitka FSS, revealed that the airplane successfully communicated with the position of Inflight 2. A transcript of the air to ground communications between the airplane and Sitka FSS is included in the public docket of this accident.

The FAA reported that two area remote communications outlets (RCOs), Finger Mountain, located about 35 miles north-northwest of Sitka, and Angoon, located about 38 miles north-northeast of Sitka, were in reduced service status due to weak transmissions from the Sitka FSS radio. These RCOs provide radio coverage north of Baranof Island.

No emergency transmitter locator (ELT) signal was received by search personnel.

SEARCH AND RESCUE

Company personnel began search operations about 1241. At 1330, the operator notified Sitka FSS personnel that the accident airplane was overdue. The airplane was declared overdue at 1335.

Search and rescue personnel from the U.S. Coast Guard, Air Station Sitka, surface vessels, aerial and ground search volunteers, and company personnel, participated in search operations. The accident airplane was reportedly observed transiting Salisbury Sound, outbound from Sitka. Additionally, a "de Havilland sounding" airplane was heard about 1100 in the area of Emmons Island, located in Peril Strait, between Baranof Island and Hichagof Island, north of Deadman Reach. This airplane was not observed due to low ceilings. The official search was suspended by Coast Guard personnel on September 29, 2004.

Pilot Information

Certificate:	Commercial	Age:	25, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	09/02/2003
Occupational Pilot:		Last Flight Review or Equivalent:	02/02/2004
Flight Time:	2878 hours (Total, all aircraft), 500 hours (Total, this make and model), 2695 hours (Pilot In Command, all aircraft), 280 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	de Havilland	Registration:	N712TS
Model/Series:	DHC-2	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	948
Landing Gear Type:	Amphibian	Seats:	7
Date/Type of Last Inspection:	09/01/2004, 100 Hour	Certified Max Gross Wt.:	5000 lbs
Time Since Last Inspection:	20 Hours	Engines:	1 Reciprocating
Airframe Total Time:	16155 Hours as of last inspection	Engine Manufacturer:	Pratt & Whitney
ELT:	Installed, not activated	Engine Model/Series:	R985-AN14B
Registered Owner:	Seair Adventures LLC	Rated Power:	450
Operator:	Harris Aircraft Services Inc.	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	H0VC

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:		Visibility	2 Miles
Lowest Ceiling:	Overcast / 200 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	35 knots / 40 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	13° C / 11° C
Precipitation and Obscuration:			
Departure Point:	Sitka, AK (PASI)	Type of Flight Plan Filed:	VFR
Destination:	Baranof, AK (BNF)	Type of Clearance:	None
Departure Time:	1036 ADT	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	4 Fatal	Aircraft Fire:	
Ground Injuries:	N/A	Aircraft Explosion:	
Total Injuries:	5 Fatal	Latitude, Longitude:	57.047222, -135.361667

Administrative Information

Investigator In Charge (IIC): Scott Erickson **Report Date:** 06/08/2005

Additional Participating Persons: Larry West; FAA-AL-JNU FSDO 05; Juneau, AK

Publish Date:

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).